



Code-Related Research an Enriching Experience

By Geoff Geddes, for Swine Innovation Porc

If your favorite toy growing up was a chain hanging from the ceiling, you were clearly deprived. For pigs, though, this is one of many forms of enrichment, a requirement of the revised code of practice. While much research has been done on the impact of enrichment for grower-finisher pigs, there was little focus on sows, something that needed to change in light of the new sow housing requirements in the code.

“Sows will be socially enriched by the move to group housing, but if the pens have no other forms of enrichment, you’re likely to see more aggression as the animals have few distractions and little to do,” said Dr. Jennifer Brown, research scientist- ethology with the Prairie Swine Centre.

Unhealthy competition

Because sows are fed a restricted diet, the chances of aggression are even greater, especially if space allowances are low or a competitive feeding system is used, so it’s critical to understand enrichment for sows in groups.



Photo: Prairie Swine Centre

“Using a free access feeding system, we put enrichment in the common area and took time lapse photos of sows to assess their behavior: Are they interacting with the enrichment? We also did live observations of stereotypic behavior such as bar biting and sham chewing and examined changes in sow posture, area of the pen they were lying in and levels of inactivity.”

Chain reactions

For the study, enrichment was presented in four different ways: no enrichment; constant enrichment with three wood pieces on a chain, rotating enrichment every 3-4 days among rope, straw and wood on a chain, and the same rotation but with a sound stimulus added during each change that has been thought to increase the value of enrichment.

“It was important to see how these approaches influenced habituation. If you have the same enrichment all the time, sows will habituate to it and interest will drop over time. To compare the different treatments, we rotated the sows through each of the four approaches, giving them 2 weeks with each one.”

Researchers found the very presence of enrichment made a big difference with sow behavior: sows given enrichment spent more time standing than control sows which means they are more active. The difference was large enough to show that enrichment had an effect on sows’ behavior, but not so much as to affect their feed requirements. For gestating sows, greater activity levels are known to improve bone strength and muscle tone, making for fitter sows at farrowing.

Which enrichment is most enriching?

So is all enrichment created equal? Dr. Brown and her team found a significant increase in contact with the enrichment when straw was used,



Photos: Prairie Swine Centre

which was not surprising. “We included straw in the rotation as a ‘positive control’ to compare against the other treatments. Previous studies have shown that straw is an effective enrichment, and because it can be consumed it also increases satiety, the sensation of being full.”

However, in many Canadian barns straw is difficult to use due to concerns over manure management and biosecurity. “Overall, we found that rotating enrichment does help to maintain novelty and increase enrichment use. Providing rope or wood on a chain are both suitable alternatives for group-housed sows.”

Driven to distraction

Of course, there isn’t a lot of competition among sows in the free access system, so Dr. Brown feels it will be valuable to do additional studies to compare the results with enrichment use to other systems like electronic sow feeding (ESF).

“Anecdotally, though, in the commercial barns we have visited that use enrichment, sows are using it a lot when they aren’t feeding. Based on our observations and previous research, where there is competition among sows, enrichment can distract the dominant sows and give them something to do, which takes some pressure off the subordinate animals.”

For example, in ESF systems, the dominant sow often lies near the feeder entrance as it’s considered “prime turf”. By adding enrichment, you essentially create another high value area to

attract dominant individuals and assist other animals that are trying to access the feeder.

It’s clear from this project that enrichment plays a big role for sows as well as grower-finishers, and that it can assume many forms.

“Enrichment is not just toys; it can be human handler interaction, sound or the social enrichment inherent in a group setting. The important thing for producers is to ensure they provide some type of enrichment and, where possible, rotate through different kinds over time to maintain sow engagement.”

Whatever enrichment you choose, just be sure it’s safe for the animals and biosecure in addition to being able to hold a sow’s attention. As with your kids, the more you can distract them, the less damage they’ll do.

Learn more...

For more information about the work described in this article, please contact Dr. Jennifer Brown jennifer.brown@usask.ca

You may also find additional resources related to the project *Optimizing flooring and social management of group housed, gestating sows* by consulting our website:

www.swineinnovationporc.ca/research-animal-welfare

Publication of this article has been made possible by Swine Innovation Porc within the Swine Cluster 2: Driving Results Through Innovation research program. Funding is provided by Agriculture and Agri-Food Canada’s AgriInnovation Program and by provincial producer organizations.